

REMARKS

This is filed in response to the Final Office Action mailed March 11, 2005, rejecting claims 1 – 3, 5 – 8, and 10 – 16, allowing claims 17 – 18, and indicating as allowable claims 4 and 9.

Claims 4 and 9 are Allowable, Along with Claims 17 – 18

The amendments above place claims 4 and 9 in independent form, incorporating the limitations of the claims upon which they previously depended. With entry of those amendments, all grounds for objection to claims 4 and 9 is be removed.

Drawing Amendments

Replacement sheets containing Figure 4, 7 and 8 are provided herewith. Figure 4 is amended to remove the color “fill” from most of the elements and, thereby, to make that figure look less like “a photocopy,” as the Examiner characterized the prior version. Figures 7 and 8 have been converted to gray-scale half-tone format, thereby, increasing the overall contrast, again, to make these figures look less like “photocopies.” Handwritten element designations have been replaced by typing on all of these figures.

Entry of Declaration of Richard D. Thornton

The attached Declaration of Richard D. Thornton is provided pursuant to the undersigned's telephone discussion with Examiner Mullins on May 31, 2005. During that conversation Examiner Mullins indicated that he was willing to accept a declaration of the type attached hereto in view of Applicant's desire to resolve the issues raised in the recent Office Action.

There are good and sufficient reasons why this declaration is necessary and was not presented earlier. Among them are that the declaration addresses issues raised for the first time in the Final Office Action. Moreover, Examiner Mullins' assent to the declaration and the

discussion surrounding the same on May 31, 2005, suggests that presentation of the points raised therein *as facts* (rather than mere argument) is necessary to move this case forward expeditiously.

Claims 1 – 3, 5 – 8, and 10 – 16 are Allowable

The Office Action rejects pending claims 1 – 3, 5 – 8, and 10 – 16 as anticipated by U.S. Patent 5,370,059. However, as discussed with the Examiner on May 31, 2005, and established in the accompanying Declaration of Richard D. Thornton, neither the '059 patent — nor the real-world system on which it is based (i.e., the Transrapid maglev train) — teaches or suggests an array of magnets to effect all of the following (i) magnetic attraction forces to at least one rail of a guideway that has windings for a linear synchronous motor, (ii) lateral restoring forces sufficient to provide guidance for the vehicle without the need for additional structure to provide such guidance, and (iii) longitudinal forces in response to electrical current in one or more of the windings. Hence, the '059 patent does not anticipate claims 1 – 3, 5 – 8, and 10 – 16.

More particularly, as established in ¶ 6 of the attached declaration, the '059 patent is concerned with guideway support structures. It teaches little about the vehicles used on those structures, much less, among other things, about the lateral restoring forces used for guidance of those vehicles.

As established in ¶ 7 of the declaration, the text at column 1, lines 51 – 56, of the '059 patent (reprinted below), has nothing to do with providing lateral restoring forces without the need for additional structure, e.g., in the manner called for in the claimed invention:

ment parts are to be exactly positioned and firmly se- 50
cured to the track structure, and the mounting costs, up
to the final adjustment of the parts in positions variable
by screwing, are high. The working components and
equipment parts can be structurally united only in few
individual instances, since frequently materials are 55
needed for the equipment parts having coefficients of

Likewise, as established in ¶ 8 of the declaration, the text at column 4, lines 13 - 14, of the '059 patent (reprinted below) does not suggest that even two magnets would be sufficient to provide lateral restoring force as required in the pending claims of the Application:

- 10 magnets simultaneously provide the excitation field of the long-stator of the motor. Generally, the equipment elements 2 are provided on both sides of the supports 1 of the supporting structure, so the support magnets 4 are arranged on both sides of the vehicle 5.
- 15 The bottoms of all equipment elements 2 have opera-

Referring to ¶¶ 2 and 9 of the declaration, Dr. Thornton, an expert in the field of magnetic levitation transportation systems, is unable to discern any teaching in the '059 patent suggesting *inter alia* a vehicle having an array of magnets which effects all of the following (i) magnetic attraction forces to at least one rail of a guideway that has windings for a linear synchronous motor, (ii) lateral restoring forces sufficient to provide guidance for the vehicle without the need for additional structure to provide such guidance, and (iii) longitudinal forces in response to electrical current in one or more of the windings.

The same is true of the Transrapid train system upon which the '059 patent is based. See ¶¶ 10 – 15 of the declaration. This is quite plainly evident in the depictions provided in ¶ 13 of the declaration, which are excerpted from Urban Maglev Technology Development Program – Colorado Maglev Project – Executive Summary of Final Report, Colorado Department of Transportation, June 2004, at page 3, and Construction of a Magnetic Levitating Train with the high temperature superconductor Y-Ba-Cu-O, Carl Sunde, Chalmers University of Technology, at page 26. These references are not understood to constitute prior art, nor are they submitted herein as such.

As Dr. Thornton concludes in his declaration, and as the Applicant repeats here, neither the '059 patent nor the Transrapid system on which it is based, teaches or suggests an array of magnets to effect all of the following (i) magnetic attraction forces to at least one rail of a guideway that has windings for a linear synchronous motor, (ii) lateral restoring forces sufficient to provide guidance for the vehicle without the need for additional structure to provide such guidance, and (iii) longitudinal forces in response to electrical current in one or more of the windings.

For these reasons, among others, the rejection of claims 1 – 3, 5 – 8, and 10 – 16 as anticipated by the '059 patent should be removed.

The secondary reference, U.S. Patent 3,871,301, does not remedy the aforementioned deficiencies of the '059 patent, nor does the Examiner cite it as such. Rather the '301 patent is cited for the proposition that position sensing can be provided to determine the position of a vehicle with respect to a guideway. Whether it indeed provides such teachings is moot in view of the foregoing, namely, the failure of the '059 patent and the '301 patent to teach or suggest use an array of magnets to effect all of the following (i) magnetic attraction forces to at least one rail of a guideway that has windings for a linear synchronous motor, (ii) lateral restoring forces sufficient to provide guidance for the vehicle without the need for additional structure to provide such guidance, and (iii) longitudinal forces in response to electrical current in one or more of the windings.

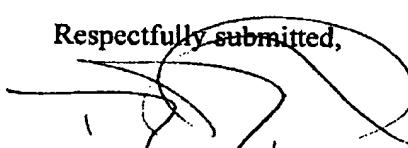
For these reasons, the rejection of claim 7 as obvious over the '059 patent in view of the '301 patent should be removed.

Conclusion

This responds in full to the Final Office Action mailed March 11, 2005. The objected-to drawings are replaced for clarity. The claims are amended to place those already indicated as allowable in independent form. The remaining claims are established as patentable over the principal reference by the attached Declaration of Richard D. Thornton. In view hereof, the Applicant request that this application be moved forward for allowance and issue.

Respectfully submitted,

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David J. Powsner
Registration No.: 31,868

NUTTER MCCLENNEN & FISH LLP
World Trade Center West
155 Seaport Boulevard
Boston, Massachusetts 02210-2604
(617) 439-2000
(617) 310-9000 (Fax)
Attorney for Applicant